A NRTAC Study | 2010

The Value of Instructional Time and Pacing Schedules for K–3 Reading

Based on data from:
Arizona, California, Idaho, Montana, New Mexico, Oregon, Washington, Wyoming, and the Bureau of Indian Education

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This report was compiled by Alice Furry and Lexie Domaradzki of the National Reading Technical Assistance Center (NRTAC), RMC Research Corporation. The study is one in a series conducted by NRTAC on topics related to the implementation of Reading First programs.

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http://www.ed.gov/programs/readingfirst/support/index.html

Contents

Executive summary

Providing all students with high-quality reading instruction is a key priority of our public educational system. Snow, Burns, and Griffin (1998) and others have identified two critical factors in student reading achievement: the quality of teaching and the amount of time for instruction. This report examines the role of instructional time, reinforced by instructional pacing schedules, in raising student reading achievement.

Established under the signature No Child Left Behind Act of 2001, the Reading First initiative was the largest federal investment in foundational literacy skills in the nation's history. Its guidance directive explicitly states that schools should consider allocating "a protected, uninterrupted block of time for reading instruction of more than 90 minutes per day" (U.S. Department of Education, 2002). Since its inception in 2002, Reading First has encouraged focusing these 90-plus minutes on teaching the core components of reading: phonemic awareness, phonics, vocabulary development, reading fluency including oral reading skills, and reading comprehension strategies.

This study looks at instructional time in terms of both the *amount of time* allocated to teaching reading and *how that time is used*. A recent study of elementary schools serving low-income students found that student achievement increased when instructional consistency within grades was ensured through the use of grade-level pacing schedules (Williams, Kirst, Haertel, & Reardon, 2006). This study examines how instructional time, *reinforced by instructional pacing schedules,* contributes to the implementation of high-quality reading instruction that leads to increased student achievement.

Sources for this study include district and school information drawn from selected Reading First states. Specifically, the study reports on states' external evaluation data; perceptions of teachers, principals, and coaches through survey and interview data; and relevant literature and research on instructional time and pacing. This report presents evidence and interpretation of:

- the links among instructional time, use of time, and pacing,
- the features of effective implementation of pacing schedules for time-on-task, and
- stakeholder perceptions of how instructional time and pacing ensure increased student achievement.

The answer to this question was of key interest to the authors: *What do stakeholders perceive as the impact of pacing and instructional time on effective teaching practice and student achievement?* While few research studies have investigated the impact of instructional pacing on learning, this report suggests that a pacing schedule aligned with the core reading and language arts program increases the appropriate use of instructional time and full coverage of content by year's end. Stakeholders investing in pacing schedules understand that when teachers agree to maintain instructional consistency within grades by using a grade-level pacing schedule, students are more likely to achieve at higher levels. Increased instructional time, coupled with pacing schedules, appears to offer all students across a grade level equal opportunity to learn and enable all teachers to become more successful with their students.

Introduction

The No Child Left Behind Act of 2001 (NCLB) established the need "to increase the amount and quality of instructional time" as a major educational policy (Section 1001, Statement of Purpose, 8). Many research studies over the past two decades have found that the amount of instructional time provided to primary-level students is a strong predictor of later reading achievement (Snow et al., 1998, p. 129). It is therefore not surprising that the federal guidelines for the Reading First initiative, intended to bring all children to grade level or above in reading by the end of third grade, encouraged states and districts to set policies that required more than 90 minutes per day for K–3 reading instruction during a protected, uninterrupted block of time (U.S. Department of Education, *Guidance for the Reading First Program,* 2002, p. 6).

To examine the results of this initiative once the national policy had been implemented, the Institute of Education Sciences (IES) commissioned a comprehensive study of Reading First outcomes. This evaluation drew on teacher, reading coach, and principal survey data and classroom observations from randomly selected Reading First schools. These data were analyzed to determine how much time was spent on teaching reading by specific content dimensions; what percentage of observed time was spent on instructional strategies; what percentage of actual time was spent on instructional strategies; whether a causal relationship existed between actual time or use of time and increased reading comprehension achievement; and how educators perceived the value of instructional time.

Both the interim and final reports featured findings on the impact of instructional time (Gamse et al., 2008a and 2008b). One of the evaluation hypotheses suggested that student achievement will vary based on the length of time in the program and on the amount of instructional time.

The IES report provides the context for reviewing what is known about the amount and quality of instructional time in Reading First schools compared with Title I non-Reading First schools. The pooled findings over the three-year study (2004–05 through 2006–07) confirmed that the daily average time for reading instruction, as perceived by Reading First teachers, coaches, and principals, closely matched the actual observed instructional block of time allocated to reading instruction, that is, approximately 112 minutes per day in grades 1 and 2.

However, the actual amount of time spent on teaching the Reading First-mandated content (phonemic awareness, phonics, vocabulary, fluency, and comprehension), averaged approximately 59 minutes in both grade levels, accounting for only 53 percent of the time in the reading block (and thus not meeting the federal content mandate of more than 90 minutes per day). Within these 59 minutes, researchers found that teachers spent approximately 30 percent of the time (18 minutes) delivering highly explicit instruction; students were engaged with print approximately 50 percent of the time (30 minutes); and students were engaged in high-quality practice approximately 18 percent of the time (11 minutes). (See Appendix A, summary of analyses for grades 1 and 2.)

Although the IES study was one of the most comprehensive studies in recent years on instructional time for beginning reading instruction in primary grades, no statistically significant evidence supports a positive relationship between instructional time (averaging 59 minutes on mandated content) and comprehension achievement when comparing Reading First schools with Title I non-Reading First schools.

Statistically significant findings did emerge between Reading First schools and Title I non-Reading First schools for instructional minutes and percentages of time spent on the three activities (highly explicit instruction, student engagement with print, and high-quality practice) within the instructional time for the teaching of mandated content (with one exception: percentage of time for grade 1 high-quality student practice).

The non-significant findings may possibly be explained by two factors:

- the schools in the report covered considerably less than the required daily instructional time; and
- the study did not control for the levels of implementation of the district's reading program (e.g., whether pacing was monitored) nor for the content covered during the time differential between 59 minutes on mandated content and 53 minutes of unknown reading instruction.

While the key findings in the IES report are instructive and invite continued interest in further field studies using observational data, the current report looks specifically at instructional time and how educators in the field define the amount and use of instructional time, the role of pacing schedules, and the degree to which educators hold teachers accountable for managing time and meeting the expectation that all students receive a full year of instruction as prescribed in the district's adopted core reading program.

Armed with research findings on the predictive value of instructional time on primary students' reading achievement, many states and districts focused on implementing instructional time (Berliner, 1978; Brophy, 1986; Stallings, 1980). Intuitively, states and districts made the connection between the use of instructional time and the pacing schedule. These districts applied pacing schedules, used assessments (every five to six weeks upon completion of a set of lessons), and monitored student progress and instructional effectiveness. In these districts, this monitoring system validated the number of classrooms that had completed the appropriate set of lessons prior to the scheduled date for the assessment.

This report portrays the significance of the pacing schedule by how it was presented to teachers and how it was used and monitored across classrooms as noted in selected states' Reading First external reports and through interviews with practitioners.

For example, the impact of instructional time, use of time, and the pacing schedule were featured in the external evaluator's Reading First—California Year 6 Reading First report. Based on the state's annual implementation survey, the most powerful implementation dimension, (Number 3—*School Implementation, Instruction,* reported on Teacher Survey Section D), had the largest effect size (standardized-beta coefficient of .083 at the 95% confidence level) on student achievement (Haager et al., 2008, pp. 80, 81).

Certainly, interest in instructional time and the use of pacing schedules in implementing a high-quality instructional program is considerable, especially now that recent school improvement criteria include them. However, while studies have isolated the impact of instructional time on student achievement, few have isolated the impact of pacing schedules on student achievement. While more research is needed to confirm the link between instructional time and pacing schedules, one exceptional study of a large number of elementary schools in California did report increased student achievement in schools with grade-level pacing schedules (Williams et al., 2006).

In brief, the current report reviews the characteristics of instructional time and pacing, state practices, and perceptions of stakeholders in an effort to broaden our understanding of the links among instructional time, use of time, and pacing and their potential to advance students' reading ability.

Findings

Links among instructional time, use of time, and pacing

The Reading First program called for an "effective reading program based on scientifically based reading research" (U.S. Department of Education, 2002, C-1, p. 6). The "must include" content focused on the "five essential components of reading instruction," identified as phonemic awareness, phonics, vocabulary development, reading fluency (including oral reading skills), and reading comprehension strategies (B-1, p. 3). In addition, an effective reading program would integrate these components into "a coherent instructional design" so that these "certain elements [could] be visible in any Reading First classroom in the country, regardless of which specific program is in use (C-2, p. 6)." This guidance is related to the initiative's intent to establish "a protected, uninterrupted block of time for reading instruction of more than 90 minutes per day" and to an "allocation of time" for teaching the specific "must include" content presented in a high-quality reading program (C-1, p. 6).

These directives required funded states to meet the "must include" content requirement. Most states defined "effective" as those reading and language arts programs designed by major publishers. An IES-commissioned study of randomly sampled districts found that schools usually used one of 16 such programs (U.S. Department of Education, 2006, p. 43). These published programs also featured spelling and writing lessons (both considered by Moats [1995] as "milestones toward mastery of decoding in reading"). Along with suggested instructional time per section of each lesson, publishers' programs also included a pacing schedule, or plan. These pacing schedules were recommended as playing a pivotal role in shaping the coherence and consistency of instructional delivery.

Defining the characteristics of instructional time

The relevance of the amount of instructional time, the use of time to teach the "must include" content, and the management of time through pacing schedules, has been linked conceptually to the quality of teaching. A classic study on learning time conducted in the late 1970s offered common sense thinking about the impact of time on student learning:

Allocated time, engaged time, and academic learning time supposition

If the type of treatment and the duration of the treatment and the sequence of treatment are crucial variables in the determination of what is learned and how much is learned, then the between-class differences in the weekly and total allocated time in content areas, and in total allocated time per day or per school year, become important operationally defined behavioral indicators of the instructional treatment.

If learning is likely to occur only when students attend to the instruction offered them, then between-class differences in engaged time become an important operationally defined behavioral indicator of the effect of instruction.

And finally, if learning primarily takes place when students are engaged with materials and activities that are of an easy level of difficulty for that particular student, then academic learning time becomes an important operationally defined behavioral indicator of student learning (Berliner, 1978).

During the 1980s, many studies confirmed that opportunities for students to learn and achieve are determined by what teachers emphasize in their classrooms (Brophy, 1986, review of the literature), as shaped by teacher practices:

- *Quantity and pacing of instruction*—the degree to which teachers carry the content through active instruction and move students through the curriculum at a brisk pace
- *Expectations and time allocation*—the degree to which teachers consider instruction as basic to their role, expect students to master the curriculum, and allocate available time to academic activities
- *Classroom management and student-engaged time*—the degree to which teachers organize the classroom as an efficient learning environment where academic activities run smoothly, transitions are brief and orderly, and little time is spent in getting organized
- *Consistent success and academic learning time*—the degree to which teachers see that students are making continuous progress all along the way
- *Active teaching*—the degree to which teachers spend most of their time directly teaching (whole class or small group) or supervising student work rather than having students work on their own or not work at all

It can be postulated that when the implementation of a reading program is based on the "quantity and pacing of instruction," "time allocation" of "academic learning time," "student-engaged time," and monitored by a pacing schedule appropriate for the program, the variability of content coverage and emphasis of content delivered across classrooms by grade levels and by schools will be reduced and thereby the chances for all students to succeed increase.

State practices about instructional time

The characteristics of Reading First practices, as recorded in states' external evaluation reports, include some details on established minimums for instructional time and on use of time (generally in terms of fidelity to the core reading programs). A sampling of states' 2006–2007 evaluation reports found the following examples.

Examples of states' commitment to instructional minutes for K-3 reading instruction

Instructional time minimums	Actual time	State
Minimum of 90 minutes daily of "protected" reading (not writing) time for core program, grades one through three; 60–90 minutes, kindergarten; plus 15–30 minutes for struggling readers	n/a	Washington State (Deussen et al., 2007)
Minimum of 90 minutes daily for kindergarten through grade three reading, including a minimum of 30 minutes of small-group, teacher-directed reading instruction; plus additional time for students not making adequate progress	n/a	Oregon (Baker et al., 2007)
Minimum of 90 minutes, plus 30–90 additional minutes for differentiated instruction	n/a	Montana (NWREL, 2007)
Minimum of 150 minutes for core program, grades one through three; 60–90 minutes, kindergarten; plus 30–45 minutes for struggling readers	85% Classrooms *100-plus minutes* 32% Classrooms *180-plus minutes*	California (Haager et al., 2008)

Use of time

Several states' evaluation documents offered insight into how the use of time is defined to the degree that schools maintain *fidelity* to the district's or school's core reading program:

Examples of states' interpretation of use of time for the core reading program

Fidelity to the publisher's core reading program	State
High use of core program with expectation for fidelity with some permissiveness regarding modifications; noted difficulty in getting through core program within 90 minutes	Washington State (Deussen et al., 2007)
Use of the core program, K–3; supplemental materials to fill gaps in core program	Oregon (Baker et al., 2007)
Eighty-four percent of the teachers follow the precise language laid out in the teacher's manual	Montana (NWREL, 2007)
Nearly 80% of teachers reported that 80% to 100% of their reading/language arts instruction relies on their adopted core reading program	California (Haager et al., 2008)
Ninety percent of teachers used the core with fidelity; 82% of teachers surveyed never or rarely skipped a lesson; and 71% never or rarely changed the order of the lessons	Arizona (Wolfersteig, et al., 2008)

Pacing

As suggested in Brophy's review of the literature, the amount of content covered and the importance of pacing both during a lesson and over time are relevant to successful implementation of the core reading program, especially when the desired outcome is all students reading on or above grade level. Very few state evaluators, however, formally addressed the use of a pacing tool (also referred to as a pacing schedule) to assure coverage of the content by the end of the school year and to set expectations for academic learning time for all students in every classroom. An example of a typical pacing schedule for a core reading program is found in Appendix B. Several state descriptions of the use of pacing for content coverage appear below.

Pacing for quantity of content coverage

Purpose of the pacing schedule

A pacing schedule for instruction creates a uniform expectation for teachers, across classrooms, to skillfully deliver specific lessons at a rate that will maximize the potential for learning.

Reading First, California Technical Assistance Center, 2008, p. 12

A pacing schedule is a master calendar for implementing a core reading program. It … coordinates important events such as the beginning of instruction, testing/assessment windows, unit/theme starting and ending dates, and grade-level meetings to discuss student data and instruction. Pacing schedules ensure that schools, grade levels, and classrooms have a clear timeline that allows them to cover the entire curriculum presented in the core reading program and coordinate testing and professional development events. Pacing schedules ensure that all students have access to all grade-level curriculum while teachers have an opportunity to map out how the curriculum will be delivered and refined.

Nevada Reading First, 2004

Instructional pacing is the speed or rate at which an instructor presents the task in a lesson. Pacing may also refer to the speed at which progress is made through a particular curriculum or instructional program.

Utah Online Staff Development Academy, 2006

Links among instructional time, use of time, and pacing schedule

Studies have demonstrated a relationship between the degree of fidelity to program implementation and achievement gains (Dane & Schneider, 1998; Ruiz-Primo, 2006) and have found that the duration and intensity of program implementation are significant predictors of achievement (Schiller, 2001). Several other implementation studies have reported significant correlations between the degree of implementation of an educational program and student outcomes (Dane & Schneider, 1998; Leinhardt, Zigmond & Cooley, 1981).

Only one annual external evaluation (Haager et al., 2008) of the states selected for this study focused on instructional time and pacing to determine a relationship between program effectiveness and student achievement gains.

Achievement outcomes related to time, use of time, and pacing schedule

California examined the fidelity of implementation as defined by the "degree to which an intervention (program) is implemented as planned (Gresham, Gansle, & Noell, 1993)." Based on the state's Reading First Implementation Index survey measure, which pooled items over a four-year period (2004–2008), the authors found that the largest effect size and the highest correlation between schools' student achievement scores and implementation factors were attributed to the dimension of School Implementation/Instruction. Referred to as to the "most powerful implementation dimension" with a statistically significant ($p < .05$) standard Beta effect of 0.087, the 28 response items covered the use of the core reading program—pacing schedule, pre-planning, monitoring assessments, and management of fidelity to the program.

California Finding (Haager et al., 2008)

The California factors appear to confirm the research reviewed by Brophy—the degree of teacher practice does affect student outcomes. What was not included in the School Implementation/Instruction dimension was instructional time. Instructional time was part of the Teacher Implementation dimension, which included range of instructional minutes, focus on delivery of the core program, adherence to the pacing schedule, and monitoring of student progress to inform instructional decisions. These teacher practices were ranked as the third most powerful implementation dimension with a statistically significant ($p < .05$) standard Beta effect of 0.075 (Haager et al., 2008, pp. 80, 81).

A preliminary finding—the concept and practice of using a pacing schedule—needs to be further developed because of its probable effects on the degree to which teachers set expectations, offer opportunities for students to learn, provide full coverage of content, maintain fidelity to programs as designed, and provide skillful teaching; all of these afford increased student learning.

Implementation of pacing schedules for time-on-task

Reading First teachers have experienced what researchers on effective schools concluded:

> *Given the positive relationship between engaged time and learning, there is a clear logic behind the protected classroom time strategy—committing a larger portion of the school day to uninterrupted teaching increases the certainty of higher student achievement (Rosenholtz, 1985).*

To meet the requirements of a pacing schedule, instructional time must be protected. Time-on-task is essential. Implementing a pacing schedule commits the district, school, and classroom to teach reading every day for the agreed-upon number of instructional minutes appropriate for each grade level, from the first day of school to the last day of school, days before and after holidays, testing and assessment days, and special days. Furthermore, the core reading program's weekly schedule may be slightly altered based on district-level decisions. For example, although most core reading programs divide themes/units into multiple five-day weeks, some have only four days, and other weeks only have three with program options to complete the five-day schedule. But most important, the pacing schedule guides full coverage of the program and minimizes the possibility that portions of the program are skipped. These conditions for the implementation of a pacing plan are part of Nevada's non-negotiable ground rules on pacing (Nevada Reading First, n.d.).

Several states, in external evaluation reports or reading plans, have addressed the issue of instructional minutes and implemented aligned pacing schedules to guarantee adequate time and full coverage of the reading program. Examples of how these two factors interface with teacher practice are offered below by an agency and a few states. An example of a typical pacing schedule for core reading programs provided to teachers appears in Appendix B.

Arizona

(Wolfersteig et al. 2008, pp. 66–68, 79)

In the state's commissioned study on *factors of effectiveness,* teachers were surveyed on which factor of instruction most affected the degree to which students scored higher on the state's end-of-year assessment. The section of the survey on *Fidelity-Modification* of the core curriculum produced responses that were found to be significant for third-grade outcomes. Sixty-eight percent of the teachers agreed with the statement: "In my school, when we teach from the core reading program it is understood that it is ok to modify the pacing (for example, whether to move on at the program's suggested pace or to slow down or speed up as you think appropriate)." The evaluators, however, found that this fidelity-modifying the core remains controversial, given that there were no significant findings for grade two.

Bureau of Indian Education (BIE)

(Callow-Heusse & Chapman, 2007, pp. 8-9)

Each classroom in BIE's Reading First schools was observed and rated on *Fidelity of Implementation*. The categories of academic learning time and pace of instruction as features in the degrees of implementation are highlighted below:

High—Systematic and explicit reading instruction was consistently observed. Instruction:

- Used time efficiently to maximize academic learning time
- Was on pace to cover sufficient content for each grade level

Fair/Moderate—Instruction occurred using the core/supplemental materials but typically:

- Pacing was too slow to cover sufficient content for grade level

Academic learning time needs to be increased (e.g., not all students engaged with instruction, pacing too slow, or instructional time reduced for other reasons including interruptions or long transitions)

Poor—Reading instruction occurred but:

- Pacing of lessons or pacing across time was too slow to ensure sufficient coverage

The evaluation report concluded that schools which showed the greatest improvement gains had "policies that supported implementation of reading programs." Those schools with smaller gains had "resistance to Reading First or implementing reading programs with fidelity;" and "use of time for reading instruction was inefficient."

California

(California Technical Assistance Center, 2008, pp. 12–13)

The California implementation plan for its K–3 Reading First Initiative focused on district- and school-level assurances. One specific assurance for pacing was to:

- Assure the core reading program will be fully implemented and the daily instructional time will be protected from disruptions through use of a pacing schedule

In a published guide on all of the assurances, a section qualified the intent and importance of the assurance for pacing plans.

California's Commitment to Pacing Plans

An Assurance for the Sake of Our Students

The Assurance requires the inclusion of a district-wide pacing plan and the mandate for instruction time for reading. The district is to institute a program-based, lesson-specific pacing plan (with an instructional schedule) and ensure adherence to the mandated minimum instructional minutes appropriate for the grade level.

Pacing has been shown to be very important in learning. If the pace of instruction is slowed, students receive fewer opportunities to practice and master a given standard for reading. *The research on time-on-task has demonstrated that low-achievement groups of students actually receive less content and actual instruction during the school year. Less frequent exposure is related to depressed achievement* (Stallings, 1980).

The Assurance to establish a pacing schedule for instruction actually opens doors across classrooms. The use of a common schedule creates a system where instruction is coordinated across the grade level and all teachers are consistently teaching the standards-based, scientifically research-based program to all students.

A pacing schedule for instructional content has been perceived as unresponsive to the needs of some students. In the past, some educators have argued against pacing and believe that students learn to read and write in different ways and therefore need different approaches to learning. This assumption is false. Reading research indicates that ninety-five percent of all children learn to read exactly the same way. However, some students need a higher number of exposures to the same content in order to master it. *So, in essence, the real difference is the number of times a student is exposed to the material.* Together with the pacing guide, the spiraled structure of the core reading programs is designed specifically to meet the needs of almost all learners.

The success of the pacing schedule depends on the district's establishing and protecting the instructional minute requirements, sometimes called "sacred time." This "sacred time" deepens instruction and addresses the needs of particular students. In working with small groups of students, teachers can address their needs while other students practice and apply their learning in independent activities provided by the program.

Two California administrators in the same guide offered their views on the importance of the pacing schedule:

District Views on Pacing Plans

"The most difficult job the district will have is to keep the instructional time and require adherence to the pacing schedule."

(Superintendent, Bakersfield City Elementary Schools District)

"Initially, in our district, pacing plans were perceived as unnecessary and unrealistic. Implementing the pacing guides has been a challenge for administrators and teachers. The pacing guides were not well understood nor perceived positively by some teachers. We heard teachers saying things like: 'The program just has too much to teach.' 'The teacher's manual is hard to follow.' 'The students can't sit still that long to get to all the content.' 'The small group and large group instructional sessions are not working.'

"As we began to address these reactions, we also began observing classrooms. We found that the key ingredients to teachers' success with the pacing guide are planning and preparation. Pacing creates the need to plan and prepare, which leads to better teaching, which leads to easier pacing. When we targeted planning and preparation, without giving up on the pacing, our teachers began to see improvements."

(Assistant Superintendent, Paramount Unified School District)

Idaho

(Boise State University, 2007, pp. 27-29)

The external evaluators focused on the perceptions of "high performing teachers" about implementing the reading program with fidelity, flexibility, and the efficient and full use of instructional time. The term "pacing" was not used when describing the teaching practices and behaviors. However, the findings listed below suggest that adherence to lesson schedules were used and resulted in excellent use of instructional time. It might be called "pacing without the label." Teachers:

- Had a high degree of academic press daily
- Used every available moment in the classroom to teach
- Started lessons on time according to the daily schedules
- Executed transitions, often masterfully
- Used time fully and efficiently
- Came to class prepared to teach the day's lessons
- Had high expectations for all students and built program delivery to match those expectations

Monitoring implementation of pacing schedules

When adherence to a pacing schedule is routinely monitored, the value of pacing becomes known and its use becomes more the rule. There are several ways the states and districts formally and systematically review the status of coverage by classroom. All of the methods of monitoring coverage of content testify to the use and importance of a pacing schedule.

- Technical assistance team walkthroughs to monitor progress
  - Example: Idaho and Washington collect instructional pacing reports through technical assistance providers after a school visit.

Sample Site Visit Report

Prepared by Washington State Regional Coordinator

Date of Visit: April 16 & 20, 2009 **School:** _____ **District:** _____

Focus of Visit: Progress monitoring data check; Classroom visits; 3rd-grade team meeting

Grade	January % at benchmark	April progress monitoring % on target
1	64/104 = 64%	61/94 = 65%
2	71/97 = 73%	45/87 = 51%
3	54/97 = 56%	47/96 = 48%

Pacing data:

- **Kindergarten program:** 66% of students are *on target to complete Unit 17* or higher; **currently 34% of students are not on target to meet end of year goals.**
- **First grade program:** 66% of students are *on target to complete Unit 38* or higher; **currently 34% of students are not on target to meet end of year goals.**

- District- or school-level assessment schedule using assessments embedded in core program
  - California monitors pacing through an assessment calendar aligned to the pacing schedule. The assessment is designed to be administered at the end of a unit or theme. Typically the district monitors the schools for administration of the assessment within a week or two from the pacing schedule's date for completion of the unit or theme. Most districts provide an online assessment reporting system so that information is collected electronically and dispersed to all stakeholders (classroom teacher, school coach and principal, supervisor of principal, and superintendent). The value of the pacing schedule is that all stakeholders, including students, know when the core program-embedded assessments will occur and consequently can confirm the completion of the specific unit for every classroom. Without these assessments, as was demonstrated prior to adopting the pacing schedule, there was wide variation on coverage of content within the school and within grade levels (e.g., kindergarten classroom of students only received 50% of the program; or the first grade classroom of students received 100% of the program by winter recess—two extremes, but they do occur).

- Direct reporting on lesson progress
  - Oregon provided districts and schools with an online data management repository system that tracked lesson progress and organized student information on various assessments. Access to the database was available to various stakeholders.
- End-of-year documentation through the District Internal Evaluation Report
  - California required districts to report, by school, the number of classrooms by grade level that completed all lessons based on the district's pacing schedule with the expectation that all classrooms had covered the material of the 5–6 week's lesson schedule (within one week, ahead or behind) and all lessons by the end of the school year.
- Classroom observation of instructional practice
  - BIE's *Classroom Rating of Fidelity of Implementation,* reviewed earlier, noted the degree to which the classroom reading program was "on pace to cover sufficient content."

Perceptions of instructional time and pacing

It can be said that a key to successful teaching as well as learning is the match between what is expected and what really happens in classrooms every day. This study has been framed to examine the links among the amount of instructional time, the use of time, and the use of a pacing schedule and whether they turn out to be important—an intuitively reasonable proposition. Many practitioners believe that these factors matter and can contribute significantly to equalizing opportunities for all primary-grade students and increasing their mastery of the basic skills of reading.

For perspective on this proposition, selected players, particularly those whose roles are connected to classrooms, have been interviewed to learn their views on instructional time and pacing and whether they perceive a connection to student academic success. In addition, one state surveyed districts on their pre and post views on participation in Reading First. The specific areas of interest for this study relate to the use of a core reading program, instructional time, pacing, and the need for pre-planned delivery of daily lessons. Findings from both sources, interview and survey, suggest a tightly coupled relationship between instructional time and pacing schedule.

Interview findings

An interview method was used to gain practitioners' views on the use, monitoring, and impact of pacing schedules on teaching and learning. Candidates were first recommended and screened by Reading First leaders representing Arizona, California, Idaho, Montana, Washington, and Wyoming. The main criterion for selection was experience in administering or using pacing schedules. The final set of participants, interviewed in April and May 2009, included four school principals, one each from California, Montana, Oregon, and Washington; and five reading coaches, one each from Arizona, Idaho, Montana, Oregon, and Washington.

Principals and reading coaches were not randomly selected and their views should not be considered representative or generalizable to the views held by their job-alikes in their and other states. The interview protocol appears in Appendix C.

There was consensus among principals and reading coaches on how they supported the use of pacing schedules.

Roles of Principal and Coach Related to Adherence to Pacing Schedules

Principals' leadership role was to:

- Serve as a buffer to guarantee uninterrupted instructional time
- Set expectations for daily coverage of the core reading program
- Provide feedback to teachers on implementing the pacing schedule
- Monitor, through walkthroughs and unit or theme assessments, adherence to the pacing schedules, within a week's time

Reading coaches' technical support role was to:

- Provide non-evaluative support for implementing grade-level pacing schedules
- Conduct site-level professional development sessions on the purpose of pacing schedules for both pacing within a lesson component and overall pacing, the emphasis on lesson planning with approximate instructional time for each component, and the need of full adherence to the pacing schedule
- Partner with teachers to solve problems related to pacing
- Analyze and identify difficult concepts and lessons in the core reading program that may need pacing adjustments within a lesson component
- Reinforce the purpose of pacing for full coverage of the core reading program to give every student adequate opportunities to learn and practice grade-level skills expected to be mastered by the end of the school year

In general statements, principals reported that consistent, comparable instruction was the overarching goal of reading instruction in their schools. All principals discussed the need to provide their students with equitable opportunities to learn. Individual principals made some anecdotal comments, excerpted here to provide context for the roles each played.

Comments by Principals on Their Leadership

Lesson Learned

"I would change my approach to be more proactive more quickly and work to solve pacing issues earlier. I wouldn't let pacing issues go for as long as I did as a new principal in the building."

Coverage is Mastery

"Coverage must be delivered consistently to ensure mastery of content. By pacing, we are kept aware of our challenge. This year, only one grade level didn't finish core (all teachers were new to the program this year)."

Monitoring

"Monitoring is a natural part of the way grade-level team meetings function. The coach and I function as a team in our walk-throughs in making sure results are present. If, in a walk-to-read set up, a teacher is three weeks behind, it is glaringly obvious. Other teachers and the building leaders know this and thus change occurs. Before Reading First, we just 'hoped' that we covered the material and addressed the needs of individual children. Those days are gone."

"Reading leadership or collaborative meetings work better than my monitoring alone because accountability with peers created the right kind of pressure and support."

Several reading coaches shared perceptions on issues that arose among their teachers in implementing pacing schedules.

Comments by Reading Coaches on Their Interactions with Teachers

Support

"I used the approach of 'let's try it, see how it goes,' to make adjustments at the lesson component level. I became a partner with the teachers because I valued their input. I was honest with them and showed vulnerability that keeping on the pacing schedule was hard for me too. We were all taking risks."

Issues

"Teachers had issues. Kindergarten teachers felt we were moving way too fast and that it limited their creativity. First-grade teachers said they were moving too fast so that the students were not reaching mastery. I shared my belief that the pacing schedules are beneficial since they ensured that sufficient time is allowed for students to learn and practice new skills over time since the core program was spiraled. I also shared that the pacing schedules encouraged us to collaborate and work on grade-level lesson planning."

Mastery vs. Spiraling

"The mastery issue is always present when teachers are asked to address pacing. For teachers new to SBRR-based core reading programs, they at first were not implementing the program by design and they doubted that it was possible to stay within the assigned schedule and still have students mastering their reading skills. Eventually teachers realized that students could meet expectations and pacing could be accomplished. Some teachers accepted pacing more easily. Sometimes those teachers who had the concern that students were not 'having fun' struggled more than other teachers in the full implementation of the schedule."

Leadership Support

"When the district and principal clearly share expectations and hold teachers accountable for pacing, it is much more successful. When the principal is not clear or does not monitor implementation, lots of problems can occur."

One state's pre- and post-outcomes

In light of the mandated emphasis on instructional time allocated to teaching reading, specifically the "must include" content (U.S. Department of Education, 2002), and the district practice of requiring the use of a pacing schedule aligned to the core reading program, it was intriguing to explore district perceptions of the federal reading initiative, both at the time of entry (pre-program) and at the time of the closing of the sixth year (post-program). In a special study commissioned by the California Legislature, an opportunity to examine pre and post data unfolded. Several important questions were asked of personnel in 93 Reading First districts. District leaders were asked to explain why the district participated by rating K–3 reading initiative factors on a five point scale (5 = extremely positive and 1 = extremely negative.) The responses to questions on instructional time and pacing schedules had mean scores of over 4 on a 5-point scale, which suggests a consistent, moderately positive view of factors that are germane to this study.

Perceptions of California Reading First districts
Pre-participation in Reading First
(Heimbichner, McMillan, Moulton, & Dhar, 2008)

Question: ***How positively or negatively were the following factors viewed when your LEA was considering to apply for Reading First funding?***

Measure: 5-Point ranking scale: 1= extremely negative, 2= moderately negative
3= did not play a significant role, 4= moderately positive, 5= extremely positive

Factors	Mean	S.D.	N
Requiring time for teachers to plan lessons and review assessment results collaboratively	4.3	0.9	94
Requiring a minimal amount of daily instructional time (150 minutes grades one through three; 60 minutes half-day Kindergarten) to implement the adopted core program	4.1	1.0	93
Requiring teachers to use a pacing schedule for coverage of the adopted program content	4.0	1.0	93

In another section of this same survey, personnel at 93 districts were further asked whether others at their schools perceived, at the end of the Reading First program, that their experiences were favorable. The districts' responses to the "postiveness" of several requirements associated with a pacing schedule ranged from 58% to 93% in positive agreement.

Perceptions of California Reading First districts Post-participation in Reading First
(Heimbichner et al., 2008)

Question: ***How has the Reading First Program been perceived in the following areas in your K–3 schools?***

Measure: Percentage of responses in five categories from extremely positive to extremely negative

Factors	Percent extremely positive	Percent moderately positive	Total percent
Requiring time for teachers to plan lessons and review assessment results collaboratively	58.0	35.0	93.0
The effect of the Reading First program on improving student achievement	58.0	31.0	89.0
Requiring a minimal amount of daily instructional time to implement the adopted core program	43.0	26.0	69.0
Requiring teachers to use a pacing schedule for coverage of the adopted core program content	32.0	34.0	66.0
Requiring teachers to teach the same content at approximately the same time	41.0	17.0	58.0

In summary, the perceptions of personnel in this state's districts tended to be relatively positive on coverage of content through use of a pacing schedule for all classrooms, agreement to allocate a minimum daily instructional time for teaching the core reading program, and encouraging teachers to plan daily lesson delivery collaboratively and to monitor assessment results.

The sources of information presented confirm a common understanding of time and pacing. The comments generated through the interview process demonstrate how tightly coupled instructional time and pacing are. The impact is maximized for teachers and students when district and school leadership clearly articulate their expectations, when coaches are trained to support teachers in their quest to teach all students well, when principals are encouraged to believe that change can occur, when collaborative grade-level lesson planning sessions are the norm, and when everyone feels responsible for frequently monitoring coverage of content through the use and review of curriculum-embedded assessments and their results.

It becomes clear that pacing, though foreign to educators at the outset, played a valuable role in accounting for what took place in classrooms. As part of the systematic implementation of a reading program, holding schools accountable through a pacing schedule is students' "insurance policy" that they will receive equitable opportunities to learn.

Summary of importance of instructional time, use of time, and pacing

The elusive finding: Is there evidence that when "reading is taught relentlessly, every day, every grade, every year" students achieve? What is the impact of the multiple practices that are thought to make a difference in teaching and student learning? The IES report (Gamse et al., 2008b, p. xv), introduced in Section I, concludes after its three-year investigation that:

- "Reading First produced a positive and statistically significant impact on amount of instructional time spent on the five essential components of reading instruction promoted by the program (phonemic awareness, phonics, vocabulary, fluency, and comprehension) in grades one and two. The impact was equivalent to an effect size of 0.33 standard deviations in grade one and 0.46 standard deviations in grade two."
- "Reading First produced positive and statistically significant impacts on multiple practices that are promoted by the program, including professional development in scientifically based reading instruction (SBRI), support from full-time reading coaches, amount of reading instruction, and supports available for struggling readers."

Key finding: Amount of reading instruction

The outcome measures of the IES report that define classroom reading instruction included (a) observed minutes of instruction (for each "must include" content area and for combined content areas) and the proportion of time spent within the content area on highly explicit instruction (e.g., instruction where the teacher modeled, offered clear explanation, and used examples); and (b) high-quality student practice (e.g., teachers asked students to practice such word learning strategies as context, word structure, and meanings). Statistically significant findings were reported on these outcome measures for certain grade levels:

Reading First Impact Study Final Report
Instructional Time Counts
(Gamse et al. 2008b, p. xxii)

Statistically significant findings show what matters

- Total amount of time teachers spent on the "must include" content in grades one and two
- Proportion of time spent on highly explicit instruction in grades one and two
- Proportion of time spent on high-quality student practice in grade two

These statistically significant findings suggest some provocative questions:

- What if the 59 minutes, on average, spent per day on "must include" content were increased to more than 90 minutes per day?
- What if highly explicit instruction (in both whole and small group) were increased to more than 30% of the daily instructional minutes?
- What if high-quality student practice were increased to more than 18% of the daily instructional minutes? and

- What effect could the universal acceptance of sufficient instructional time and pacing have on student outcomes?

Every state, district, and school needs to have a coherent, consistent, and well-articulated framework for the amount and use of instructional time in order to implement what the IES report shows matters. In the present study, consideration has been given to the importance of time managed through the use of pacing schedules.

One of the states reported on in this study, California, considered several program elements as essential to sustain. These elements match the IES report's statistically significant practices of (a) professional development, (b) support for full-time reading coaches, (c) a protected reading and language arts time block, and (d) teaching of learning strategies. California added an element—one found to be statistically significant in its annual survey of predictors of higher achievement scores. That element was the *pacing plan or guide*.

The findings in the California implementation survey offer a profile of factors that could be included in an operational framework that begins to suggest how the *what if* questions could be answered. While the outcomes in percentages of agreement are not altogether congruent, they show a trend across school stakeholders, teachers, coaches, and principals. Full implementation of a reading and language arts program represents an approach that meets accountability for offering all students opportunities to learn, in whatever classroom, with the serious intent to provide high-quality direct instruction and high-quality student practice through the full coverage of the district's core reading program.

Profile of teachers, coaches, and principals required to use pacing schedules California, 2008*

Factors/Findings	% Teach (N)	% Coach (N)	% Prin. (N)
Pacing schedule			
Follow pacing schedule approximately to very closely	94 (12,164)	96 (876)	96 (807)
School has a pacing schedule	97 (16,223)	88 (876)	84 (814)
Within a week of where they should be	82 (16,154)	---	---
Instructional time			
Spend 120–180+ instructional minutes in grades one through three teaching the core reading program	92 (13,757)	94 (866)	92 (802)
Have uninterrupted instructional time	---	72 (874)	83 (814)
Lesson planning time			
Spend 60–120+ minutes daily outside of school day	45 (16,247)	41 (869)	51 (809)
Use of core reading materials			
Rely on core reading program, 80–100% of the time	78 (16,202)	90 (872)	92 (810)
Implementing core reading program as designed, 90–100% of the time	71 (16,202)	55 (871)	68 (808)
General support/strong support to keep in place			
Reading and language arts time block	65 (10,684)	85 (753)	78 (647)
Pacing plan/guide	44 (7,242)	68 (607)	66 (548)
Student outcomes			
Satisfied with student results (agree to strongly agree)	55 (16,184)	60 (872)	68 (806)

* Source of data: California Reading First Annual Survey of Teachers, Coaches, and Principals, spring of 2008. Teacher information is found in Appendix A, pages 29, 32, 33, 36, 37; Coach in Appendix B, pages 5, 6, 10, 14; and Principal in Appendix C, pages 4, 5, 9, 13.

Returning to the *what if* questions: If students were to receive a full complement of time and content coverage, is it possible that a report similar to the IES report would document higher levels of student achievement? The answer is still moot. What we do know is that a pacing guide can benefit a district's teachers and students. In a way, a pacing schedule represents fair play for teachers. It gives them a road map that leads to the destination—meeting the state standards in reading by the end of the school year. It also gives teachers confidence that students enter their classrooms prepared to succeed in the new year's curriculum. For students, the pacing schedule heightens the likelihood that they can expect to succeed regardless of the classroom to which they are assigned.

There is no intention in this study to purport that pacing, alone, increases student achievement. However, as part of a comprehensive delivery system of a solid core reading and language arts program, it is a valuable and essential tool for promoting high-quality teaching and learning. It is hoped that future research studies will pay more attention to the role and impact of pacing schedules as they influence day-to-day instruction and the delivery of full content coverage by the end of the school year. The Reading First *Guidelines* assisted states and districts to pay close attention to instructional time and the use of time for the "must do" content. Based on experience with pacing practices over the past six years, more states and districts are now demanding that their school improvement schools implement a pacing schedule and monitor, through end of unit or theme assessments, the full adherence to content coverage every 5–6 weeks—all of which, ensure that students have an equitable opportunity to learn and succeed at reading.

Appendix A: IES Reading First Impact Study, Final Report—Selected Findings

Perceived average daily minutes for reading instruction

Source of data	Construct	Grade level	Average minutes per day	
			2004–05	2006–07
Teacher survey	How many minutes per day for last week	K	99	101
		1–3	102	104
Coach/principal survey	Indicate how many minutes the reading block is scheduled	K	101	102
		1–3	110	111

Key Finding: Perceptions of the teachers, coaches, and principals on the average number of minutes allocated for reading instruction per day are close. Comparing the grades 1–3 perceptions with the actual average minutes per day for classrooms observed in the table below, the average is very close to the observable 112 minutes for both grades one and two.

Actual average daily minutes for reading instruction

Source of Data: Observations

Construct	Grade level	Average minutes per day	% of intervals
Instruction in the five essential components combined	1	59.23	
	2	59.08	
Highly explicit instruction in the five essential components combined	1		29.39
	2		30.95
Student engagement in print in the five essential components combined	1		47.84
	2		50.53
High-quality student practice in the five essential components combined	1		18.44
	2		17.82

Key findings: Instructional time by content, type of instruction, student engagement, and student practice were pooled over the span of the three-year study. The average time allocated for both grades one and two was determined to be 112 minutes.

- The five essential components of reading (phonemic awareness, phonics, vocabulary, fluency, and comprehension) as observed were taught daily for an average of 59 minutes for both grade levels during 53% of the instructional block of time of 112 minutes.

- During the teaching of the five essential components, highly explicit instruction (defined as active teaching, modeling or explaining concepts, and helping children to use reading strategies) occurred approximately 30% and 31% of the time, respectively, for grades one and two.
- During the teaching of the five essential components, 48% of the grade one students and 51% of the grade two students were observed as engaged with print.
- During the teaching of the five essential components, 18% of the instructional time at both grade levels offered opportunities for student practice.

Source: Gamse, et al, 2008b.

Appendix B: Example of a Pacing Schedule

Winner Elementary School Curriculum—Language Arts

Recommended Pacing Guide
Traditional Calendar

THIRD GRADE

Getting Started
5 Days
September 3–September 9

September 1–October 21			October 22–December 6			December 9–February 3			February 4–March 28			March 31–June 12		
Unit 1 Friendship			Unit 2 City Wildlife			Unit 3 Imagination			Unit 4 Money			Unit 5 Storytelling		
Lesson	**Selection**	**Days**	**Lesson**	**Selection**	**Days**	**Lesson**	**Selection**	**Days**	**Lesson**	**Selection**	**Days**	**Lesson**	**Selection**	**Days**
1	*Gloria Who Might Be My Best Friend*	5	1	*The Boy Who Didn't Believe*	5	1	*Through Grandpa's Eyes*	5	1	*A New Coat for Anna*	5	1	*A Story A Story*	5
2	*Angel Child, Dragon Child*	5	2	*City Critters*	5	2	*The Cat Who Became a Poet*	5	2	*Alexander, Who Used to be Rich*	5	2	*Oral History*	5
3	*The Tree House*	5	3	*Make Way for Ducklings*	5	3	*A Cloak for the Dreamer*	5	3	*Kids Did It! In Business*	5	3	*Storm in the Night*	5
4	*Rugby and Rosie*	5	4	*Urban Roosts*	5	4	*Picasso*	5	4	*The Cobbler's Song*	5	4	*Carving the Pole*	5
5	*Teammates*	5	5	*Two Days in May*	5	5	*The Emperor's New Clothes*	5	5	*Four Dollars and Fifty Cents*	5	5	*The Keeping Quilt*	5
6	*The Legend of Damon and Pythias* Unit Wrap-Up	5	6	*Secret Place* Unit Wrap-Up	5	6	*Roxaboxen* Unit Wrap-Up	5	6	*The Go-Around Dollar*	5	6	*Johnny Appleseed*	5
									7	*Uncle Jed's Barbershop* Unit Wrap-Up	5	7	*Aunt Flossie's Hats (and Crab Cakes Later)*	5

Adapted From Assurances for the Sake of Our Students (2003)
Reading Lions Center at the Sacramento County Office of Education

Appendix B: Example of a Pacing Schedule (continued)

September 1–October 21		October 22–December 6		December 9–February 3		February 4–March 28		March 31–June 12	
Unit 1 Friendship		Unit 2 City Wildlife		Unit 3 Imagination		Unit 4 Money		Unit 5 Storytelling	
Number of Lessons	6	Number of Lessons	6	Number of Lessons	6	Number of Lessons	7	Number of Lessons	7
Number of Instructional Days Allocated	30	Number of Instructional Days Allocated	30	Number of Instructional Days Allocated	30	Number of Instructional Days Allocated	35	Number of Instructional Days Allocated	35
Extra Instructional Days		Extra Instructional Days		Extra Instructional Days		Extra Instructional Days	2	Extra Instructional Days	8
								STAR TESTING	5

Adapted From *Assurances for the Sake of Our Students* (2003)
Reading Lions Center at the Sacramento County Office of Education

Appendix C: Interview Questions

Key Principal Interview Questions:

1. Why is a pacing schedule important for a program to be implemented successfully?
   - Were expectations for pacing established at your site? By whom?
   - What were the advantages/disadvantages in setting the expectation?
   - What did you expect to gain by putting a pacing schedule into place?
   - What supports were teachers provided in implementing a pacing schedule?
   - Did the state and/or district support the use of a pacing schedule? In what format?
2. How does a pacing schedule impact classroom instruction across a grade level?
   - How did the implementation of a pacing schedule impact coverage of curriculum within grade levels?
   - How did the implementation of a pacing schedule impact consistency of instruction within grade levels?
3. What issues around pacing can make it a controversial practice or an asset for successful learning [e.g., mastery teaching vs. iterative (spiraled) learning, teacher autonomy vs. fidelity to SBRR-related program?]
   - Did your teachers have issues with a pacing schedule?
   - Were these issues addressed at your site? By whom?
   - If you were to address this issue again in implementation, would you change your approach? If so, what would you change?
4. How does pacing impact use of instructional time?
   - How has a pacing schedule impacted use of instructional time at your site?
   - Did using a pacing schedule impact the instruction in the daily delivery of lessons as well as yearly coverage?
5. What evidence is available to support the use of a pacing schedule?
   - Would you continue to support the use of a pacing schedule?
   - In evaluating your school data, do you find evidence that a consistent pacing schedule impacts student achievement?
6. What evidence is available to support monitoring of the pacing schedule and adherence to instructional time?
   - Was pacing monitored? How? By whom?
   - In what ways did the use of a pacing schedule impact instructional time resulting in increased student achievement?

Appendix C: Interview Questions

Key Reading Coach Interview Questions:

1. Why is a pacing schedule important for a program to be implemented successfully?
   - How was instructional pacing and use of instructional time defined in your district/building?
   - How did you go about supporting the expectation that a pacing schedule would be followed?
   - What were the advantages that you communicated to teachers?
   - What did you expect to gain by supporting a pacing schedule with your teachers?
   - How did you support individual teachers and/or grade level teams in implementing a pacing schedule?
   - How did the principal, district, and school support your work related to the use of a pacing schedule?
2. How does a pacing schedule impact classroom instruction across a grade level?
   - In what ways did the implementation of a pacing schedule impact coverage of curriculum within grade levels?
   - In what ways did the implementation of a pacing schedule impact consistency of instruction within grade levels?
   - Did use of a pacing schedule impact the efficiency and/or effectiveness of the daily instructional lesson?
3. What issues around pacing can make it a controversial practice or an asset for successful learning [e.g., mastery teaching vs. iterative (spiraled) learning, teacher autonomy vs. fidelity to SBRR-related program?]
   - Did the teachers at your site express issues with following a pacing schedule?
   - How did you deal with these teacher issues with a pacing schedule?
   - If you were to address this issue again in implementation, would you change your approach? If so, what would you change?
4. How does pacing impact use of instructional time?
   - Did the use of a pacing schedule equalize the amount of instructional time across the classrooms and grade-levels with whom you worked?
5. What evidence is available to support the use of a pacing schedule?
   - In looking at classroom practice, has the use of a pacing schedule made teachers more collaborative? More responsive to student needs?
6. What evidence is available to support monitoring of the pacing schedule and adherence to instructional time?
   - What system did you use to monitor the pacing schedule among classrooms and grade levels?

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